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77. *Turdus ustulatus swainsonii*. SWAINSON'S THRUSH.—Not uncommon on the Saddle-Back range from about 2800 feet up to the summit of Graylock, 3505 feet. Met with sparingly as low as 2000 feet.

78. *Turdus aonalaschkæ pallasii*. EASTERN HERMIT THRUSH.—Common at elevations from 1000 or 1200 feet to 2900 feet.

79. *Merula migratoria*. AMERICAN ROBIN.—Common. Frequently seen on the mountains even to the summit of Graylock.

80. *Sialia sialis*. BLUEBIRD.—Rather common in the settled parts of the country.

ERRATA.

In the first part of this paper, Vol. VI, Jan. 1889, p. 42, line 14, for "oppositeness" read "appositeness"; line 30, omit "Yellow Warbler."

NOTES ON THE GENERAL HABITS, NESTS AND EGGS OF THE GENUS *PASSERELLA*.

BY CAPT. CHARLES E. BENDIRE.

THE GENUS *Passerella* was established by Swainson in 1837, and an excellent synopsis of it may be found in Mr. H. W. Henshaw's able article in the "Bulletin" of the Nuttall Ornithological Club, Vol. III, Jan., 1878, pages 3 to 7 inclusive.

According to the latest classification, that of the A. O. U. Code and Check-List, this genus is divided into four forms, one species proper and three races, as follows:

I. *Passerella iliaca* (Merr.), FOX SPARROW.

II. *Passerella iliaca unalaschcensis* (Gmel.), TOWNSEND'S SPARROW.

III. *Passerella iliaca megarhyncha* (Baird), THICK-BILLED SPARROW.

IV. *Passerella iliaca schistacea* (Baird), SLATE-COLORED SPARROW.

Regarding the breeding habits of *Passerella iliaca*, the handsome and well-known Fox Sparrow, familiar to all eastern ornithologists during its migrations, I am unfortunately unable to add anything that is new, from personal observations, and I cannot find any positive records in the bird literature accessible to

me that its nests and eggs have been taken by collectors within recent years. It does not appear to breed within the limits of the United States excepting in the Territory of Alaska. In addition to the authorities given by Baird, Brewer, and Ridgway in their 'History of North American Birds,' Vol. II, pages 50 to 53 inclusive, Mr. M. Harvey states in 'Forest and Stream,' Vol. VII, p. 99, that it breeds in Newfoundland, where it is called Hedge Sparrow, sometimes building its nest on the ground, and sometimes in bushes.

Mr. M. Abbott Frazar saw a pair at Hegaska, Labrador, in August, 1884, with their young, and Mr. Ernest E. T. Seton in his list on the birds of Manitoba in 'The Auk,' Vol. III, July, 1886, p. 324, writes that it breeds abundantly on Duck Mountain, Manitoba, but says nothing about taking their nests and eggs. Col. N. S. Goss tells me that he found these birds breeding on Bryon Isle, one of the Magdalen group in the Gulf of St. Lawrence in July, 1879 or 1880, but he was too late for eggs, they having then fully fledged young. It appears to be abundant during the breeding season throughout the greater portion of British North America, reaching well up to the Arctic Circle.

According to Mr. Robert McFarlane the Fox Sparrow nests on the ground as well as in low trees and bushes. Eggs of this species were taken at Moose Factory, Hudson Bay Territory, as early as June 2, 1860, and at Fort Resolution, Great Slave Lake, June 1, 1864. Most of the nests found by Mr. McFarlane were placed in low bushes, a foot or two from the ground; in one instance a nest of this species was found in a small tree eight feet up. The nests are constructed out of coarse dry grasses externally, lined with finer material of the same kind, as well as hair, moss, and feathers. A nest now before me, No. 4411, National Museum collection, collected by C. Drexler at Moose Factory, June 2, 1860, containing four fresh eggs, was placed in a pine bush, two feet up, and well concealed from view. On the outside this nest is five inches wide, by three inches deep, inside three inches wide by two inches in depth.

Sir John Richardson states that the eggs are five in number, of a pale, mountain-green tint, and marbled with irregular spots of brown. Judging from the records here, I am inclined to believe that four eggs usually completes a set, and that five is rather an exceptional number. In the eggs of this species before me, 36

in number, the ground color appears to be a pale bluish as well as grayish green in some cases, which undoubtedly has faded to a certain extent. This ground color is occasionally almost entirely hidden and overlain by a uniform brownish suffusion of different degrees of intensity ranging from Prout's to chocolate brown (see Ridgway's 'Nomenclature of Colors'), giving such eggs an evenly colored appearance resembling somewhat the darker colored phases or types found most commonly in the eggs of *Calcarius lapponicus*. About ten per cent show this pattern. Eggs in which the ground color is plainly and readily perceptible, are irregularly blotched and speckled to a greater or less extent with various shades of chocolate, umber, and vandyke brown, ecru drab, cinnamon rufous, and lilac gray. The difference in these eggs, as regards their markings, is very great, scarcely any two out of different nests being exactly alike. The largest egg in the number before me measures $1.00 \times .68$ inch, the smallest $.80 \times .61$ inch. The average is $.80 \times .63$ inch.

The distribution of the Fox Sparrow during its migrations is well enough known, as well as its general habits while with us as a winter visitor. I took a single specimen, a female, on Oct. 8, 1885, at Fort Custer, Montana, which I believe marks about the western limit of its range, during its migration. The specimen showed scarcely any trace of rufous, but was, on examination by Mr. Robert Ridgway, referred by him to this species. It is now in the collection of Mr. Manly Hardy, Brewer, Maine.

II. *Passerella iliaca unalaschcensis* (Gmel.), TOWNSEND'S SPARROW.

This bird was first described by Gmelin in 1788, under the name of *Emberiza unalaschcensis*, and seems to be confined in its habitat to the Pacific coast region, breeding, as far as is known at present, throughout British Columbia and Alaska Territory, and passing in its migrations well into southern California. Till recently it was supposed to be confined to the western slopes of the Cascade Range in Oregon and the Sierra Nevada in California, but I found it abundant at Fort Klamath, Oregon, on the eastern slope of the Cascades, during the fall of 1882, and spring of 1883, but did not find any evidence of its breeding there, and am inclined to think that it is only a migrant. A number of

specimens of this form, collected by me there, are now in the collection of the National Museum at Washington, D. C. I have taken it in the fall as early as Sept. 2, and as late as Nov. 15, 1882. None seem to winter there. In the spring of 1883 I took specimens as early as March 19, before the snow had all disappeared. They seem to travel in small companies, seldom more than six would be seen together, and it was rare to see them associate with other species. They were usually found in dark, damp thickets, laurel and evergreen especially, near streams, where they might be heard industriously scratching amongst the dead leaves in search of food. They are essentially terrestrial in their habits, and not particularly shy. Their usual call note is a faint *szip* several times repeated. They are not as good songsters as either *P. iliaca* or *P. iliaca megarhyncha*, and about on a par with *P. iliaca schistacea* in this respect. In their summer homes they may possibly appear to better advantage.

The credit of the discovery of the nest and eggs of this subspecies belongs, I believe, to Mr. Alphonse Forrer, a well-known California naturalist, who obtained three sets of their eggs for me at Seewash, Vancouver Island, British Columbia, on May 14 and 24, 1876, and June 7, 1877. A nest and three eggs of this species were also taken by Mr. E. W. Nelson, at St. Michaels, Alaska, June 5, 1880, and a nest and two eggs by Mr. W. J. Fisher, at Kadiak, Alaska, in the spring of 1883.

The nest taken by Mr. Nelson, now before me, No. 21,351, U. S. National Museum collection, is a handsome, compact, and solid structure, composed outwardly principally of moss, leaves, and plant fibres, well woven and incorporated together; it is lined with fine bits of dry grasses and the black hair-like fibres of a species of hypnum moss. Its exterior diameter is about five inches; depth, three inches; interior diameter, two and a quarter inches; depth, two inches. Their nest is usually placed in dense undergrowth and laurel thickets from six inches to one and a half feet from the ground, always well concealed and at no great distance from water. The number of eggs to a set is from three to four. Their ground color varies from a faint greenish gray to pale bluish green, a trifle more pronounced than in eggs of *P. iliaca*. This is due possibly, however, to their cleaner and better preparation and more recent collection. The eggs are blotched and speckled with irregularly shaped markings of vandyke and

claret brown, as well as several paler shades approaching lilac gray and vinaceous rufous. Of the twelve specimens of this form now before me, the largest measures $.98 \times .70$ inch, the smallest $.84 \times .62$ inch. Average $.89 \times .65$ inch.

***Passerella iliaca megarhyncha* (Baird), THICK-BILLED SPARROW.**

This peculiar race was first described by the late Prof. S. F. Baird in 1858 from specimens obtained by Mr. J. Xantus, near Fort Tejon in southern California. The habitat of this form is given as the mountains of California, including the eastern slope of the Sierra Nevada, to which at least southwestern Oregon must now be added, as I found it as a summer resident and breeding about Fort Klamath, Oregon. Adult and young birds, nests and eggs, from that locality, taken by me during the summers of 1882 and 1883, are to be found in the National Museum collection.

This bird makes its appearance about Fort Klamath, Oregon, during the first week in April, and remains mostly till late in October; an occasional straggler may be encountered as late as Nov. 10. I think it arrives somewhat later than Townsend's Sparrow in the spring. In its general habits it resembles the other forms of this genus, but it is a much better songster than either Townsend's or the Slate-colored Sparrow. Mr. H. W. Henshaw, in his paper on this genus referred to previously, says: "Probably resident wherever found," but I am quite satisfied that it is only a summer resident at Fort Klamath, and that it spends the winters southward. It does not seem to be common about there, and from its retiring habits, spending most of its time on the ground, in the thick undergrowth along the streams, it is difficult to observe it at its ease, and were it not for the noise these birds make, by their constant scratching amongst the fallen leaves in search of food, their presence would be still harder to ascertain.

Their nests are placed in various situations, *Kalmia* thickets, service-berry and willow bushes, as well as thick, scrubby evergreens, being preferred. They are always well hidden, and may be found from a few inches to six feet from the ground; none were found by me directly on the ground. Eggs may be looked for about June 12, and as late as July 15. The usual number laid is three or four, and but one brood, I think, is reared in a season.

A nest found July 13, 1882, near Fort Creek, Klamath Valley,

National Museum No. 18,725, containing four eggs almost hatched, was placed in a service-berry bush about three feet from the ground, on the border of a dense pine grove. This nest is composed externally of coarse plant fibres and dry willow bark, and is lined with fine grasses and a few horse-hairs. It is not as compactly built as nests of Townsend's or Slate-colored Sparrows. Its exterior is five inches wide by two and one half inches deep; inner diameter, three inches; depth, one and a quarter inches. It was evidently deeper originally, and has been much compressed and flattened in packing.

Another nest, taken July 5, 1883, was likewise found in a service-berry bush, growing on the banks of Wood River and partly overhanging it. This nest was placed about eight inches from the ground. It also contained four eggs, with medium-sized embryos. The female allowed me almost to touch her, and did not appear to be very much distressed at her loss, hopping around on the ground and undergrowth in the vicinity, uttering an occasional *szip* till she was shot. This bird had also previously been found breeding by Mr. L. Belding of Stockton, Cala., on June 7 and 14, 1879, at Big Trees, Calaveras County, California, and several specimens of the eggs collected by him are now before me; and, as far as I know, the credit of the first discovery of the nest and eggs of the Thick-billed Sparrow belongs to this gentleman.

In the twenty specimens of the eggs of this species now before me the ground color varies from a pale grayish green to grayish blue. The markings on the majority of these eggs seem to be finer and more evenly and regularly distributed over the entire egg than in the other forms already mentioned, with a tendency to running longitudinally. The spots and blotches vary from walnut-brown and burnt umber to fawn color, lilac, and mouse-gray in different specimens. The largest egg of the series measures $.98 \times .68$, the smallest $.82 \times .61$ inch. The average is $.87 \times .65$ inch. Mr. Charles H. Townsend found this Sparrow quite common about Mt. Shasta, California, during summer in 1883 and 1884, where it frequented the chaparral tracts and bushes scattered through the pine country, and where it bred, as indicated by the number of immature birds met with. I have never met with these birds north of Fort Klamath, and this point marks probably their northern breeding limit.

***Passerella iliaca schistacea* (Baird), SLATE-COLORED
SPARROW.**

This form was discovered by Lieut. F. T. Bryant, U. S. A., on the headwaters of the Platte River, Colorado, in July, 1856, and first described by the late Prof. S. F. Baird in 1858. Its range extends from the eastern slopes of the Rocky Mountains, across the great Basin to the western spurs of the Sierra Nevada in California and the eastern slopes of the Cascade range in Oregon; during its migrations, at least, I obtained it in the latter range in the vicinity of Fort Klamath, but only as a straggler. Mr. F. Stephens collected a specimen in February, 1880, in the vicinity of Tucson, Arizona, which marks the most southern point of its range as far as known at present. I have found it nesting as far north as the Palouze River in Whitman County, Washington Territory, in Lat. 47° , Long. 41° west of Washington, where I took a nest containing three eggs of this form and an egg of *Molothrus ater*, the Cowbird, on June 18, 1879. This locality marks the most westerly point where the latter species has been found as yet, I believe. My most westerly record where I found the Slate-colored Sparrow breeding, is on the headwaters of the Des Chutes or Fall River in Crook County, Oregon, June 13, 1882. While this bird certainly covers an extensive range during the breeding season, it seems to be extremely irregularly distributed. I have found it fairly abundant in some sections and entirely absent in others, although apparently equally suitable to it. Mr. R. Ridgway found it very plentiful in Parley's Park in the Wahsatch Mountains, Utah, and was the first naturalist to discover its nest and eggs. According to my own observations it is not so much a forest-loving bird as the two preceding forms, and seems rather to prefer the willows and rose thickets along the streams in the more open country, but is generally most abundant close to the foot-hills of the mountains. I have had excellent opportunities to observe it during four seasons while stationed at Camp Harney, Grant County, Oregon, where I found it a common summer resident and took a number of its nests and eggs. The Post (now abandoned) was located in the mouth of a cañon on the southern slope of one of the spurs of the Blue Mountains. A small mountain stream, appropriately named

Rattlesnake Creek from the numbers of these amiable reptiles found in its vicinity, flowed along the eastside of the Post, and sank a couple of miles below on the plain, forming the Harney Valley. The banks of this creek were fringed on both sides by dense willow and wild rose thickets, amongst which larger trees of various species were occasionally interspersed. These thickets furnished acceptable homes for the Slate-colored Sparrow, as well as for numerous other species, and quite a number of them bred right about the houses, in fact they were much more abundant for some reason in the immediate vicinity of the Garrison than at any other locality in that region. Possibly a more abundant food supply was found about there, or greater security from rapacious birds and mammals, owing to the proximity of the Post, may have had something to do with this fact. Here I found them quite tame and unsuspicious, much more so than the two preceding forms, and I have often seen them hopping around amongst the fowls and feeding with them. They usually arrived in that vicinity about the last week in March or the first week in April, and were amongst the earliest summer visitors to make their appearance. The greater part of the day was spent by them on the ground, scratching amongst the manure heaps or fallen leaves, searching for larvæ, small worms, insects, grain, and seeds of different kinds. Like the other forms they are quite terrestrial in their habits. They remained till late in October, and an occasional specimen was met with in the more sheltered portions of Harney Valley, near Malheur Lake, well into November. Operations for housekeeping were usually commenced in the latter half of May and throughout the beginning of June. I have, however, found one nest containing three fresh eggs as early as April 17, 1877. Some pairs at least, if not all, rear two broods in a season. While the female is covering her eggs, the male may frequently be heard giving vent to his nuptial song, in the early morning and just before sundown. His lay, however, is rather weak and of small compass, very much resembling that of *Melospiza fasciata montana*. He delivers it while perched on some small twig, overlooking the thicket in which the nest is placed and generally close to it. Their usual call note is a repeated *tzip, tzip*.

The nests of this form are bulky, but exceedingly well constructed affairs. The material composing the outer body is used at least in a very damp, if not in a positively wet state. It is

thoroughly welded together in this condition, forming when dry a compact, solid structure which will retain its shape perfectly. They are rather deep for the small size of the bird, and cup-shaped. The finer finishing touches are attended to by the female, which fits the material used as the inner lining of the nest carefully in its place. As a rule two or three days are consumed in the construction of a nest, but I have positive evidence, in one instance at least, that a pair of these birds built an entirely new nest, and did it well too, between sunrise and sunset of the same day, and an egg was deposited in it that evening. A nest now before me, No. 17,662, National Museum collection, taken by me at Camp Harney, Oregon, May 20, 1878, is outwardly constructed of various coarse plant fibres, willow bark, and marsh grass, and lined with fine grass tops taken from a species of rye grass. The outside of the nest is four and a half inches across by four inches deep; the inner diameter is two and a half inches, the depth two inches. About one third of the nests examined by me (some fifty in number), were lined inside with more or less horse-hair, and a couple, in addition, with feathers.

The Slate-colored Sparrow, according to my observations, prefers to nest in willow thickets, next in dense wild rose bushes, and occasionally in a bunch of tall rye grass, but always close to water. The nests are generally placed some little distance from the ground, rarely at a greater height than three feet, and are invariably well hidden. But a single instance came under my observation where the nest was placed directly on the ground; in this case it was hidden by an overhanging bunch of some species of swamp grass.

The usual number of eggs laid by these birds is four, although three are not infrequently found. I found but two nests in fifty containing five eggs, the latter were evidently very uncommonly large sets. Incubation, as nearly as I was able to determine, lasts from twelve to fourteen days; both sexes assist.

The ground color of the majority of the eggs of this form is a pale malachite-green, varying to olive buff and pale grayish green. The markings vary from burnt umber, chocolate and chestnut brown, to Indian and pale heliotrope purple, lilac, and lavender gray. As a rule the spots and blotches are better defined in shape and more evenly distributed over the egg than in the other forms of this genus, in no case obscuring the ground color

completely. The largest egg of the series, comprising 115 specimens, measures $.96 \times .68$ inch, the smallest $.74 \times .60$ inch. This egg, however, is abnormally small, the remaining ones in the same set coming fully up to the average size, which is $.88 \times .63$ inch. The shape of the eggs of the genus *Passerella* is ovate, with very little variation in this respect. Comparing the eggs of this genus with those of *Zonotrichia* and *Melospiza*, to which they are most closely allied, it will be found on a critical comparison that, aside from their uniformly larger size as a whole, there is also more difference in the coloration and markings than would appear to the superficial observer; in a word, the general pattern varies to a considerable extent, and while occasionally sets of eggs of these different genera may resemble each other rather closely, the greater number show very distinct characteristics of their own, which are easily enough noted by the oölogist, but not so readily described.

NOTES ON THE SUMMER BIRDS OF THE RESTIGOUCHE VALLEY, NEW BRUNSWICK.

BY JOHN BRITTAIN AND PHILIP COX, JR.

THE RESTIGOUCHE RIVER flows easterly through the extreme northern part of New Brunswick, and before emptying into the Baie des Chaleurs, forms for sixty miles the boundary between New Brunswick and Quebec. The greater part of the valley is in about latitude 48° N. The country is undulating, in some places mountainous, and almost an unbroken forest. Winter is very severe; snow falls to a great depth and lingers until May; while chilly east winds, from the icy Gulf, make spring late and cold. Summer, however, is warm, except near the sea, where it is tempered by cool breezes; yet the nights, even in July, and far up the valley, are occasionally frosty and cold enough to form ice. About 110 miles of the valley, namely from the mouth of a tributary called the Wagan, to Campbellton, situated at the head of the estuary, were pretty thoroughly investigated, and although the